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ABSTRACT:

The dielectric composition contains a mixture of a ceramic composition containing $Ba_aRE_bTi_cO_3$, wherein RE represents a rare earth element, with $0.05 \le a \le 0.25$, $0.525 \le b \le 0.70$, $0.85 \le c \le 1.0$, and 2a + 3b + 4c = 6, and free from lead and bismuth, a glass composition, and a metal oxide. The glass composition preferably contains ZnO or MgO, SiO₂, and at least 10% by weight of Li₂O or TiO₂. Preferably, the alkaline earth metal oxide is MgO. By preference, the glass composition essentially consists of 50-80% weight of SiO₂, 5-25% weight of MgO, and optionally another alkaline earth metal oxide, and 10-25% by weight of Li₂O, and is substantially free from boron. The dielectric composition can be sintered in the presence of Cu electrodes at a temperature below the melting point of Cu so as to manufacture an electronic device such as a ceramic multilayer element. After sintering, the dielectric composition has a relative dielectric constant of at least 55.

Fig. 1